

1 9 measuring means for measuring a deviation of said first
2 stage relative to said second stage in a predetermined
3 direction other than the direction of scanning movement; and
4 adjusting means for adjusting the second stage on the
5 basis of the measurement by said measuring means.--

1 --144. An apparatus according to Claim 143, wherein
2 said adjusting means adjusts movement of the second stage on
3 the basis of measurement by said measuring means.--

1 --145. An apparatus according to Claim 143, wherein
2 said measuring means comprises a laser interferometer.--

1 --146. An apparatus according to Claim 143, wherein
2 said predetermined direction is perpendicular to the
3 direction of scanning movement.--

1 --147. An apparatus according to Claim 143, wherein
2 said predetermined direction is a rotational direction about
3 an axis which is perpendicular to the original or the
4 substrate.--

1 --148. An apparatus according to Claim 143, further
2 comprising means for projecting the pattern of the original
3 onto the substrate in a reduced scale, so that reduced-scale
4 patterns are printed in different zones of the substrate.--

1 --149. An apparatus according to Claim 143, wherein at
2 least one of said first and second stages comprises an air
3 bearing for guiding movement of said stages.--

1 --150. An exposure apparatus in which a portion of a
2 pattern of an original is projected onto a substrate and in
3 which the original and the substrate are scanned
4 synchronously such that the pattern of the original is
5 transferred to the substrate, said apparatus comprising:

6 a stage for scanningly moving one of the original and
7 the substrate in a scanning direction;

8 a reference member provided on said stage and being
9 adapted to be used for measurement of the position of said
10 stage; and

11 detecting means for detecting, with the use of said
12 reference member, deviation of the direction of scanning
13 movement of said stage from a desired direction on the basis
14 of measurement, at different locations along the stage
15 movement direction of the position of the stage with respect
16 to a direction different from the scanning direction.--

1 --151. An apparatus according to Claim 150, further
2 comprising means for correcting the direction of scanning
3 movement on the basis of detection by said detecting
4 means.--

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1 --152. An apparatus according to Claim 150, further
2 comprising a laser interferometer for measuring the position
3 of said stage, wherein said reference member comprises a
4 reference reflection mirror to be used with said laser
5 interferometer.--

1 --153. An apparatus according to Claim 150, further
2 comprising means for projecting the pattern of the original
3 onto the substrate in a reduced scale, so that reduced-scale
4 patterns are printed in different zones of the substrate.--

1 --154. An apparatus according to Claim 150, further
2 comprising a frame member which supports said stage and a
3 projection optical system for projecting the pattern of the
4 original onto the substrate.--

1 --155. An apparatus according to Claim 150, wherein
2 said stage comprises an air bearing for guiding movement of
3 said stage.--

1 --156. An exposure apparatus in which a portion of a
2 pattern of an original is projected onto a substrate and in
3 which the original and the substrate are scanned in a timed
4 relation such that the pattern of the original is
5 transferred to the substrate, said apparatus comprising:

6 first and second stages, one of which is for scanningly
7 moving the original and the other of which is for scanning
8 moving the substrate;
9 a projection optical system for projecting the pattern
10 of the original onto the substrate;
11 first measuring means for measuring positional
12 information of said first stage;
13 second measuring means for measuring positional
14 information of said second stage;
15 a base for supporting said first stage and for
16 supporting said first measuring means;
17 a base for supporting said second stage and for
18 supporting said second measuring means; and
19 means for circulating a temperature-controlled medium
20 with respect to said first stage.-->

1 --157. An exposure apparatus in which a portion of a
2 pattern of an original is projected onto a substrate and in
3 which the original and the substrate are scanned
4 synchronously such that the pattern of the original is
5 transferred to the substrate, said apparatus comprising:
6 first and second stages, one of which is for scanningly
7 moving the original and the other of which is for scanningly
8 moving the substrate, wherein said first and second stages
9 are guided by air guide means;
10 a projection optical system for projecting the pattern
11 of the original onto the substrate;

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12 first measuring means for measuring positional
13 information of said first stage;
14 second measuring means for measuring positional
15 information of said second stage;
16 a base for supporting said first stage and said first
17 measuring means; and
18 a base for supporting said second stage and said second
19 measuring means.--

1 --158. An exposure method for the manufacture of
2 microdevices, in which a portion of a pattern of an original
3 is projected onto a substrate and in which the original and
4 the substrate are scanned in a timed relation such that the
5 pattern of the original is transferred to the substrate,
6 said method comprising the steps of:

7 providing first and second stages, one of which is for
8 scanningly moving the original and the other of which is for
9 scanningly moving the substrate;
10 measuring a deviation of the first stage relative to
11 the second stage with respect to a predetermined direction
12 other than the scanning movement direction; and
13 adjusting the second stage, on the basis of the
14 measurement in said measuring step.--

1 --159. a method according to Claim 158, wherein said
2 adjusting step comprises adjusting movement of the second

3 stage on the basis of the measurement in said measuring
4 step.--

1 --160. A method according to Claim 158, wherein said
2 measuring step comprises measuring the deviation by use of a
3 laser interferometer.--

1 --161. A method according to Claim 158, wherein the
2 predetermined direction is perpendicular to the scanning
3 movement direction.--

1 --162. A method according to Claim 158, wherein the
2 predetermined direction is a rotational direction about an
3 axis that is perpendicular to one of the original and the
4 substrate.--

1 --163. A method according to Claim 158, further
2 comprising projecting the pattern of the original onto the
3 substrate in a reduced scale.--

1 --164. An exposure method for the manufacture of
2 microdevices, in which a portion of a pattern of an original
3 is projected onto a substrate and in which the original and
4 the substrate are scanned in a timed relation such that the
5 pattern of the original is transferred to the substrate,
6 said method comprising the steps of:

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7 providing a stage for scanningly moving one of the
8 original and the substrate in a scanning direction;
9 providing a reference member on the stage, which
10 reference member is adapted to be used for measurement of
11 the position of the stage; and
12 detecting, by use of the reference member, deviation of
13 the direction of scanning movement of the stage from a
14 desired direction on the basis of measurement, at different
15 locations along the stage movement direction, of the
16 position of the stage with respect to a direction different
17 from the scanning direction.--

1 --165. A method according to Claim 164, further
2 comprising correcting the direction of the scanning movement
3 on the basis of the detection in said detecting step.--

1 --166. A method according to Claim 164, further
2 comprising measuring the position of the stage by use of a
3 laser interferometer, wherein the reference member comprises
4 a reference reflection mirror to be used with the laser
5 interferometer.--

1 --167. A method according to Claim 164, further
2 comprising projecting the pattern of the original onto the
3 substrate in a reduced scale.--